GRUMMAN plane news

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F-14 to make debut aboard 'Big E' Sept. 17

September 17 will mark the climax of efforts by thousands of Grumman and Naval personnel, as the Navy's newest fighter, the supersonic, swing-wing F-14 Tomcat, makes its initial operational deployment. On that day the USS Enterprise will sail out of NAS Alameda, California, on its way to the western Pacific as the flagship for Rear Adm. Owen Oberg, Commander of Carrier Group Seven. Aboard will be the first two F-14 operational squadrons, VF-1, under the command of Cdr. F. J. Thaubald, and VF-2, commanded by Cdr. J. A. Brantaus.

The Enterprise with its accompanying ships will spend at least half-a-year in the western Pacific, operating out of Cubi Pt., the Philippines. During that time the ship's 24 F-14s and their crews will receive their most grueling and complete workout, short of combat itself. The F-14 will be run through the whole gamut of carrier operations and its full operating flight envelope.

Strong Grumman influence

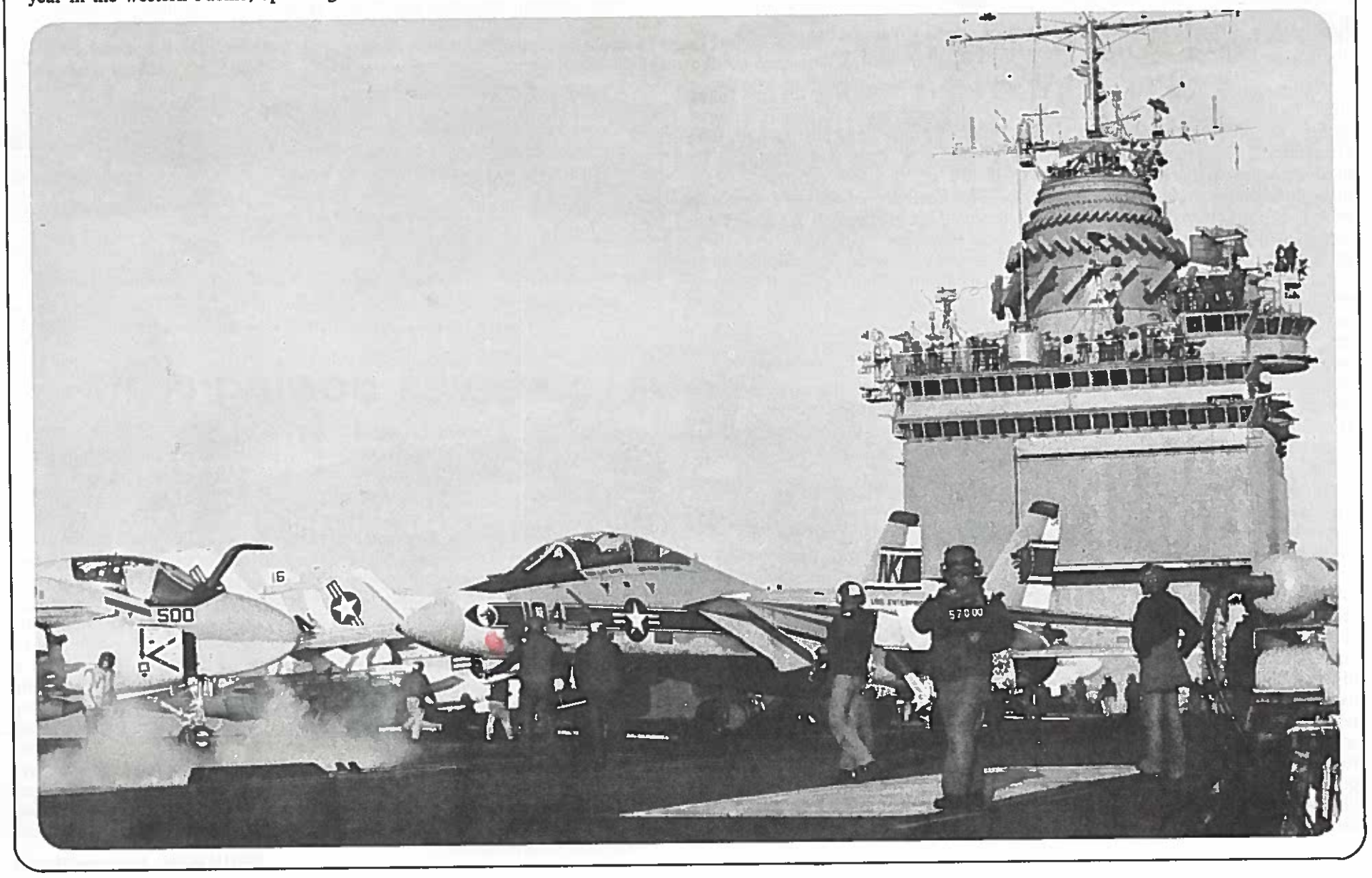
With its coming deployment in the Pacific, the Enterprise will bear a strong Grumman influence: over 60 percent of the aircraft aboard the nuclear-powered vessel will be Grumman-made. Besides the F-14, the Enterprise will carry A-6s, KA-6Ds, E-2Bs, EA-6Bs and the venerable C-1A. The EA-6B will be making its debut—on the Enterprise at least—in the new EXCAP configuration. EXCAP, or expanded Capability, will provide just that—an improved electronic countermeasures capability for the Prowler.

The Enterprise, under the command of Capt. C. C. Smith, is the largest fighting ship afloat, 85,000 tons, as well as the world's first and only active nuclear carrier. The ship comprises a small city, population 5,500, with its own hospital, printing plant, post office, and even a library. Its air conditioning plant has the capacity to cool 400 full-size homes. The huge hangar deck could accommodate 10 basketball courts.

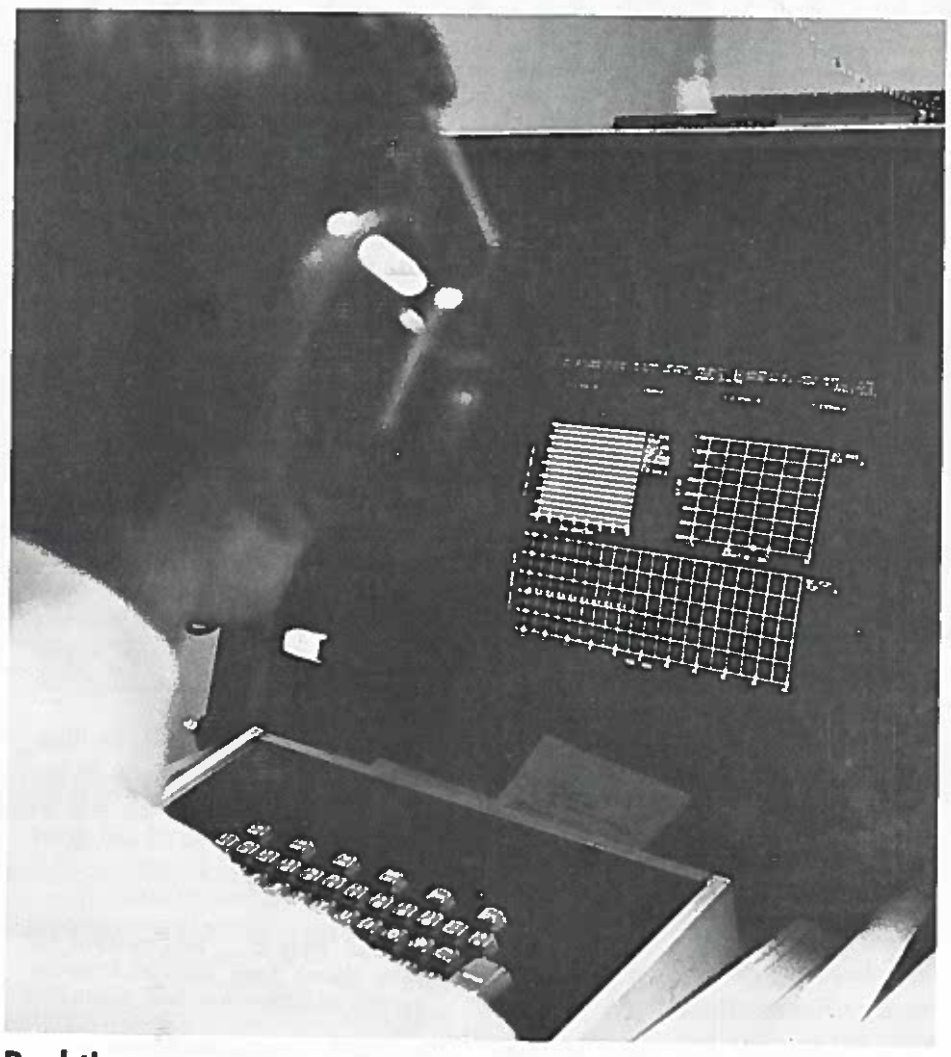
The Enterprise comes of a long line of famous fighting ships of that name, the most recent and perhaps most distinguished being the original "Big E", the USS Enterprise which saw service throughout World War II, fighting in some of the heaviest battles of the Pacific theater where it helped turn the tide against the Japanese forces.

The F-14 will be following an illustrious naval tradition when it becomes the eighth Grumman "cat" to serve in the fighter arm of the great carriers.

Aboard 'Big E'. F-14 readied for catapult launch from Enterprise during carrier qualifications last month.



GDS provides real-time results with automated telemetry



Real-time answers. Grumman technician monitors flight test answers displayed on ATS console while test flight is in progress.

"Grumman is changing the art of flight testing," states Ray Le Cann, director of Telemetry Products for Grumman Data Systems. Le Cann has hard evidence to back up that statement, including several recent contract awards to Grumman Data Systems for Automated Telemetry Systems (ATS) equipment and services.

ATS, a term coined by Grumman to describe the original real-time, flight-test analysis system installed at Calverton in 1970, is markedly different from both predecessor and current competitive telemetry systems. ATS real-time answers (i.e. test data results) are displayed *during* the test flight in readable, complete and usable form.

The ATS approach has other attributes that are equally important, but they may appeal more to managers and treasurers of an organization than to pilots and engineers.

For one, an ATS system can be a moneysaver because of its ability to serve a wide variety of ground and flight tests and to include different aircraft types, thus avoiding the necessity of producing expensive tailor-made hardware and software for each new test program. Even more important, with tailor-made systems less time is required to test newly developed computer hardware and analysis programs just when time is least likely to be available—prior to the first flight of new aircraft. Even after the first flight, the elaborate break-in period required by the old fashioned custom-built data systems is a costly and disruptive influence on the test program.

The flexibility of the ATS approach has paid off handsomely for Grumman Data Systems. On May 15, 1973, Grumman received a contract for a $4.4 million dollar version of the ATS to be installed at Edwards Air Force Base in California.

This system called AFTDS (Air Force Test Data System) will begin its contribution to the efficiency and economy of weapon system development with the testing of Rockwell International's B-1 bomber prototype later this year.

Because flexibility is an inherent part of the Grumman ATS, the AFTDS will be able to support the B-1 program within weeks of its completion, avoiding an elaborate break-in period.

Grumman Data Systems has furnished the Air Force with the telemetry formatting, pre-processing, and display systems for the AFTDS, and, most importantly, has provided the Grumman-developed Tele-SCOPE 340 ™ software operating system, which serves as the heart of AFTDS.

The Tele-SCOPE 340 ™ operating system will allow expansion of AFTDS to allow five aircraft to be tested and analyzed simultaneously, thereby making the AFTDS the hub of most future flight testing at Edwards Air Force Base.

The AFTDS will record, analyze, and display answers concerning the structure, internal subsystems, and dynamic behavior of the aircraft being tested, by means of a radio telemetry link with the airplane.

The system provides display of all information, permitting immediate flight decisions. If an unexpected or unsatisfactory development occurs during the flight, the design engineer, the flight test engineer, and the pilot can evaluate its effect and, if desirable, repeat the test to confirm results.

"It's hard to appreciate how important this instantaneous response is," says Telemetry Systems AFTDS Director Lynn Wilson, "When unexpected answers show on the cathode ray tube, we can immediately explore the condition while the plane is still in flight and while all the test participants are on hand to evaluate and correct the condition."

ATS applications in Europe

From the Mojave Desert of Southern California to the mountains of Bavaria is just a small step for GDS's Commercial Telemetry groug. A GDS-Grumman Aerospace team of flight test engineers and computer experts has been working in Manching and Munich, Germany, since the end of last year to develop ATS designed software for the Multi-Role Combat Aircraft (MRCA) being developed as a joint venture by Britain, Italy, and Germany.

Like other flight test analysis contracts won by Grumman Data Systems, the award of the $800,000 MRCA project grew directly out of the reputation that Grumman ATS has earned in support of the F-14. Officials of Messerschmidt-Bulkow-Blohm (MBB for short) visited Calverton to see the ATS operating in support of an F-14 flight. Impressed with what they saw, they asked Grumman to augment their system using ATS applications software. A presentation by a Grumman team, led by Le Cann, resulted in an award in November of last year. The first flight of MRCA took place last month.

The MRCA contract was won by Grumman because MBB was "impressed with the ready availability of working, answer-generating software, applicable to their vehicle," says Le Cann. The MRCA contract, he believes, signals the growing international recognition Grumman is receiving as the best in the computerized flight field.

Flightless bird. The UTTAS Ground Test Vehicle will undergo testing of rotor and powerplant without leaving the ground.

ATS serves Boeing craft

Last July 23rd, a crowd of technicians and engineering personnel gathered at Calverton to watch a helicopter roll down the taxi strip. No, it didn't herald Grumman's entrance into the helicopter business but it was something unusual: the first on-site flight test program by a company other than Grumman at Calverton.

The helicopter, a non-flight ground test vehicle (GTV) was trucked in from Boeing Vertol's Philadelphia facility as part of a Boeing contract with the U.S. Army to develop a Utility Tactical Transport Aircraft System (UTTAS) for the U.S. Army to replace the outmoded UH-1 Huey.

The Grumman Aerospace and Grumman Data Systems Corporations have received one contract each from the Boeing Vertol and Boeing Computer Services corporations totaling over $5 million for flight and ground test support to Boeing at Calverton.

The UTTAS is a twin jet-engine, single-rotor helicopter designed to carry 11 troops and a three-man crew. The vehicle, designed to operate over high altitude terrain and in tropical and arctic conditions with high battle tolerance, is scheduled for deployement by the late 1970s. Boeing is slated to deliver three UTTAS helicopters to the Army by January 1976 for a fly-off competition with Sikorsky Aircraft. The fourth prototype, the GTV, will be used to test the UTTAS rotor system which is powered by two General Electric T-700 1536 Shaft horsepower

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Federal law sets up key provisions for private pension plans

On August 20, The Employee Retirement Income Security Act of 1974 was passed by the House of Representatives, two days later it cleared the Senate, and, on Labor Day, President Gerald Ford returned to Washington from the presidential retreat at Camp David to sign the bill into law. Although the new Federal legislation, a compromise between two separate bills offered last year by the House and the Senate, had been expected for some time, its passage signaled a flurry of activity as many corporate and union officials and their advisers began analyzing the new legislation to try and determine its full import.

While The Employee Retirement Income Security Act of 1974 does set out certain specific provisions for this nation's private pension plans, there are some areas it doesn't address—corporations or organizations that do not have pension plans, for example. But for existing and new pension plans, the legislation does cover such areas as eligibility, vesting, funding, fiduciary responsibilities, limitations on benefits and contributions, taxation of lump-sum distributions, termination insurance, investments, and disclosure information.

Last week *PLANE NEWS* spoke with Grumman Corporation Secretary Bob Bradshaw about the law and what its effect might be on the Grumman Employee Pension Plan. Bradshaw cited the following as key areas of the new law:

ELIGIBILITY - How soon after hire does an employee become a participant in a pension plan? The Act requires that all eligible employees age 25 or older with one year of service be covered by the plan. However, any employee who is less than five years away from normal retirement when he or she is hired may be excluded from pension plans. This portion of the act goes into effect on January 1, 1976.

VESTING - What requirements does an employee have to fulfill to be guaranteed a pension at normal retirement age or, under certain conditions, at an earlier age? Among the more important provisions of the Act are ones concerning mandatory vesting requirements and definitions of "accrued benefits." Employers have three vesting alternatives—under all three an employee must be at least 50 percent vested after 10 years of service. The latest a plan can provide full vesting is after 15 years of service.

Benefits payable to vested former employees must be available at early retirement dates under the same age and service requirements that apply to active employees.

The normal form of benefit upon retirement must be a joint-and-survivor option providing at least 50 percent continuation to a surviving spouse, unless a plan participant selects, in writing, not to receive his or her pension with such a joint-and-survivor option.

FUNDING - Funding is the process of setting aside and investing employer contributions to pension funds so that monies will be available in the future to provide pension payments to eligible plan retirees. The Act requires that the valuation of the pension fund should give proper consideration to what these holdings would bring on the open market as well as what the buying price was.

LIMITATIONS ON BENEFITS AND CONTRIBUTIONS-There are restrictions on the maximum amount of pensions, e.g., $75,000 annually. Employer contributions to profit-sharing and thrift and savings plans are also limited, e.g., $25,000 per year. However, a "grandfather" clause may protect current participants.

TERMINATION INSURANCE - Under the 1974 law, pension plans must have Federal termination insurance to protect employees' vested benefits — up to a maximum of $750 a month—in the event of termination of the plan.

FIDUCIARY RESPONSIBILITIES - Trustees of pension plans must abide by strict Federal rules and regulations that pertain to those persons and institutions who take care of pension funds. The 1974 law expands the scope of fiduciary responsibilities. In general, a Federal "prudent man rule" would be applied and transactions between a pension or welfare fund and a party-in-interest would be prohibited with certain limited exceptions. Pension plans may not invest more than 10 per cent of their assets—based on fair market value—in employer securities, for example. However, the 10 percent rule does not apply to profit-sharing or savings plans where the plan explicitly provides for investment in employer securities. Fiduciaries are prohibited from acting in any manner that is adverse to the interest of the plan or its participants.

DISCLOSURE - Beginning next year, the new Act requires organizations to file disclosure data with the Government and communicate information on all plans to employees. The information must include reports when new plans are established and periodic reports in the future.

PORTABILITY - Portability is a condition in which an employee can carry vested pension benefits from one employer to another. Starting in 1975, with an employer's concurrence, an employee with vested rights who leaves employment can transfer funds from the pension fund to a Federal individual retirement account (IRA), tax-free, until he or she retires. If another job is taken thereafter, funds in the IRA could be transferred to the new employer's qualified plan. This procedure would require the concurrence of both the present and former employer, as well as the individual involved.

Reviews Grumman plan

In commenting on these provisions of the new Act, Bradshaw pointed out that:

"Although we are still in the process of examining the detailed requirements of the new law it appears that the Grumman Employee Pension Plan meets or exceeds those provisions set out in The Employee Retirement Income Security Act of 1974. One major exception, however, is the provision on eligibility which will require that effective January 1, 1976, persons who are 25 years or more and who have one year service with the company will be covered by our plan."

Bradshaw also noted that contributions to the Grumman pension plan are made entirely by the company and

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(Photo by Dick Sander)

Century mark. Last Monday evening this group of night Manufacturing personnel took time out for a goodbye photo with F-14 No. 100. The plane had just completed final assembly at Plant 6 and was being delivered to Plant 7 for weapons system test and preparation for first flight. So far, 90 F-14s have been 'sold' to the Navy, with the 100th Tomcat scheduled for delivery to the Fleet in October.

Grumman retirees 'back home again' busily restoring Wildcat for Smithsonian

They could be someplace else: fishing, golfing, visiting grandchildren, on the road in campers, fixing gadgets and appliances, sleeping late, or being bored. But since May, every Tuesday and Saturday 30 Grumman retirees are "back in the saddle again" busily restoring an old F4F Grumman Wildcat for the Smithsonian Institute.

They call themselves "oldtimers" or "Wildcat Commandos," and re-named their work area: "Plant 39 to 65 and over" (Helen Chlanda *insists* her age is 39). Since May they have worked a two-day week from 9 a.m. to 3 p.m. The atmosphere is relaxed compared to how the "oldtimers" remember it. As one Grumman vet said, "It's like a country club . . . you get to work again with old friends."

"Of course," says Art Romeo, who's coordinating the effort, "we have our production milestones to meet . . . but we have a good time joking about overtime, transfers, raises, shortages of supplies, and vacation requests . . . things that just don't affect us anymore."

While the "Wildcat Commandos" do joke about working again, the famed World War II plane couldn't be in better hands. Combine the years of experience these 30 Grumman veterans have in the aircraft field and it would total, amazingly, more than 750 years —an average of a little over 25 years a person.

And working on the Wildcat brings back memories.

Take Joe Oliveri. For 28 of his 30 years at Grumman, Joe was on the road as a field rep for Quality Assurance. He traveled so much that by 1956 he received recognition from American Airlines for a million miles in the skies, but he never made the second million-mile mark — that was cut short by his retirement in 1971. Before becoming a field rep, Joe worked on the F4F's wing ordnance . . . and now 30 years later he's back on the job.

They call Al Dierberger the "hammer man." Al doesn't like to brag but "there aren't many people left who can hammer out metal like I can." And with good reason . . . he's been doing it since 1934 when he began at Grumman. In fact, everytime Al hammers out detail parts for the old Wildcat he can't help but say, "It's just like being back at Grumman during the war." Although Al loves being back, he admits he's not getting any younger and two days a week back at the old stand is all he can handle. Much of the rest of the time, though, he spends in his own workshop building birdhouses and making cookie sheets and pans for his wife. (He claims his cookies sheets can last a lifetime.)

The Wildcat Commandos also have a resident master riveter: Vinny Emanuele. Vinny says he would much rather be at the beach with his grandchildren, at his part-time job, or at home with his wife, but "something calls me back to Grumman." For most of the workday, Vinny can be found rebuilding the Wildcat's fuselage. Rivet gun in hand and lying on a foam rubber bed he has made for himself, Vinny has almost completely rebuilt the frame. And though he's from the old school, Vinny says that, "thanks to the modern tools all the men are now using, this Wildcat will be even tougher than it used to be."

Art Solbrig considers himself "a wire twister amongst a bunch of tin knockers." Art was an engineer in electronics before retiring, but he is quick to point out that he's a "youngster"—only 17 years at Grumman—

compared to most other oldtimers on the job who had over 30 years with the company.

When Whitey Henrikson was a kid starting out at Grumman, he used to taxi Wildcats from Plant 2 to Plant 4. But working here again is not just a trip down memory lane for Whitey—he had to retire in his late forties because of a stroke. "Just having the chance to be back working again at Grumman is a great boost," says Whitey. "Hopefully, this will be a trial period to see if I'm ready to take on a permanent job again." In Plant 39-65 and over, his co-workers hope he waits until the restoration is completed in February — Whitey's in charge of inventory and he's the only person who knows where everything is right now.

They've made tremendous progress on the Wildcat since the old and battered F4F was wheeled into the Bethpage warehouse in May. The fabric sections of the airlerons and rudders are brand new. The engine has just arrived from the Smithsonian storage lot, and after a few days' work it will be ready for installation. Art Romeo estimates the total hours necessary for the restoration will amount to approximately 3,600 hours, and they have already put in about 1,600. "There's no trouble getting the job done when you

have the best craftsman in the business."

They joke about being "back in the saddle again." Some say, "It's a great way to get away from the missus," or wryly, "There's no future in fishing." Yet, hidden among the quips there seems to be a strong desire to fill their idle hours being productive. Perhaps it is that once again they belong to the Grumman family. After all, they had spent most of their adult lives with Grumman. Some were here when it all began and they helped build the Grumman tradition. Whatever the reason, the general consensus of the Grumman retirees in "Plant 39-65 and over" seems to be: "It's great to be back home again."

Grumman F4F: WW II standout

During the early stages of World War II, Grumman F4F Wildcats were where the action was — at Wake Island, Midway, Guadalcanal, North Africa, and numerous other sites in both the Atlantic and Pacific theatres. The Navy and Marine pilots who flew the Wildcats helped this sturdy little fighter earn a 5.9 to 1 superiority in air combat victories. And when Grumman introduced its successor, the F6F Hellcat, the Wildcats were still seeing action in the Atlantic teamed with the Grumman Avengers in anti-submarine warfare.

While the F4F was making naval air history, it made Grumman history, too. It was the first monoplane built by Grumman, first to enter service equipped with an engine having a two-stage supercharger, first to have Grumman designed folding wing (stowing), and the first to test the breakaway wingtip. Of the 7,898 Grumman-designed Wildcats produced from 1937 on, Grumman built 1,971 and General Motors built 5,927 (FM-1 and -2s).

According to Bill Scarborough, Grumman Aerospace F4F restoration coordinator, the Wildcat being restored is the 400th FM-1 Wildcat built by GM.

Some stats on the Wildcat: Armament - six 0.50 cal. Browning M-2 machine guns, two 100 lb. bombs; Performance - service ceiling 34,800 ft., range 1,650 miles, climb 2,050 feet/minute; weight, loaded: 7,975 lbs.

Project da Vinci readying for mid-October launch

Man knows less about the behaviour of the atmosphere between 4,000 and 14,000 feet than that of the very high or very low altitudes, say many meteorologists. Ironically, this is the layer which is most critical to man's activities. It is believed that movement of this layer determines how much and how far pollution is carried from its source; and it is within this layer that inversions which trap pollution over our cities are created, and regional air circulation takes place.

In mid-October Propect da Vinci will be launched to explore this little-known area of our atmosphere. da Vinci, a manned scientific balloon, will float with a body of air and measure changes in the air as it moves over the countryside. For example, does the amount of sulphur in the air over a city today increase or decrease as the air packet moves over the plains and mountains tomorrow.

Project da Vinci is jointly sponsored by the U. S. Atomic Energy Commission (AEC), the National Geographic Society, and the Department of the Army. During its flight over 25 related meteorological experiments and measurements will be performed.

The command module or gondola for this 150,000-cubic-foot helium balloon was built by Grumman Houston Corporation and designed by Fred Knapp and Art Frank of Grumman Aerospace.

Made of aluminum and fiberglass, the 600-pound re-usable gondola is a 10-foot- cube, and has two levels. The lower level is constructed of aluminum trusses and shrouded with fabric and contains such basic living provisions as food, water, sanitary facilities, and sleeping quarters for the four-person crew. The "bathtub" shaped upper level contains provisions for the pilot, navigator, project scientist, and observer, and many of the instruments to be used during the flight. Several safety features have been incorporated into the gondola should an emergency landing be necessary. In the event of a water landing, the fiberglass foam surrounding the upper-level provides buoyancy; the module also can absorb a landing shock of up to 3 "Gs".

The initial Project da Vinci flight—it will float from Las Cruces, New Mexico, to Lubbock, Texas — is expected to last about 36 hours. The crew will conduct inter-related experiments to obtain a detailed picture of changes in an air parcel as it travels across differing terrain. Included in the experiments will be measurements of temperature, humidity, air pressure, gravity waves, ultraviolet radiation, electrical fields small and large air circulations, particulates, and ozone and sulphur dioxide levels.

Members of the da Vinci crew are: pilot James Craig, a civilian employee of the U. S. Navy who is an experienced balloon pilot with 750 hours flight time; co-pilot Vera Simons, another experienced pilot with 150 hours; Dr. Rudolph J. Engelmann, a meteorologist and deputy manager of Environmental Programs in the AEC's division of Biomedical and Environmental Research; and Otis Imboden, a photographer for the National Geographic Society who will document the da Vinci flight by video tape, motion picture and still films.

If the October flight proves, as expected, to be an efficient and productive way of conducting lower atmospheric research, follow-on flights are planned. The second flight may be made in the spring of 1975.

Introductory contract bridge class offered

The Grumman duplicate bridge club is initiating a program to introduce Grummanites to the "delights" of contract bridge, at no cost. Classes will be conducted each Thursday for eight weeks in the Plant 30 cafeteria, starting at 5:30 p.m., October 3. These introductory sessions will be about 30 minutes long and will be followed by an American Contract Bridge League novice game. Participation in the game is optional, but recommended.

Leading up to the eight-week program, the bridge club is offering lunchtime discussions to better acquaint those interested in the course with duplicate bridge. The schedule:

PLANT 34 - Monday, Sept. 16 & 23, Classroom A, 12:15 - 12:45.

PLANT 1 - Tuesday, Sept. 17 & 24, Conf. Rm. B, 12:15 - 12:45.

PLANT 25 - Wednesday, Sept. 18 & 25, Conf. Rms. 3 & 4, 12:15 - 12:45.

PLANT 35 - Thursday, Sept. 19 & 26, Conf. Rm. 1A, 12:15 - 12:45.

For more information, call Hugh Montague, Ext. 3863.

plane GRUMMAN news

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River survey providing ecological data in Georgia, Alaska

Overflying the Kayukuk. Don Briggs surveys the south fork of the Kayukuk in Alaska by helicopter with an occasional stop for a close-up look.

Even the names evoke mystery and romance: the Ogeechee, Satilla, Savannah, Ocmulgee, Tallulah. And these are just a few of the rivers and tributaries that Grumman Ecosystems has been exploring in a modern day version of Lewis and Clark. A three-man Ecosystems crew is completing the final portions of a 12 month contract with the U.S. Army Corps of Engineers to determine the "navigability" of waterways in the Savannah District's five river systems in Georgia, and in small adjoining parts of Florida and South Carolina.

The navigability and mapping survey of the Savannah District is the first of a number being undertaken by Ecosystems, according to Vice President Bill Malloy, Ecosystems Environmental and Mapping Division.

Ecosystems has also received contracts to survey river systems in Alabama, Missouri and Alaska. A number of other possible survey contracts are now being pursued.

Many of these river systems were last surveyed forty years ago and since then the rivers, and human needs, have changed. The Savannah District study will emphasize the growing recreational uses of rivers and streams as well as the needs of commerce.

"We're doing a lot more than just studying bodies of water," says Harold Wiberg, who heads Ecosystems' Navigability Study Group. "We're studying the way people have used the rivers in the past, the way they are using them now and especially the way they can use them in the future."

Boating the Satilla. Harold Wiberg notes river usage on the Satilla River, Georgia.

Thus, an unpromising stretch of the Ogeechee clogged with snags and other obstacles may seem hardly suitable for a kayak, let alone motor traffic. Yet, with regular clearing of debris, these same miles of clogged waterway could become a haven for boaters, anglers and campers. Wiberg points to a time 150 years ago when the now deserted upper reach of the Ogeechee was regularly used by 30-ton ocean-going vessels which sailed the 170 miles up to Louisville, Georgia, then the state capital. Since then competition from the railroads and eventually, the automobile, wiped out this flourishing traffic and in the 1933 survey only the lower 54 miles were declared navigable.

In fact, says Wiberg, "Every river we've been on has been a very lonely river." Wiberg and fellow mapper, Dick Whitney may have been the first in decades to take a boat all the way from Louisville to the mouth of the Ogeechee.

In the Savannah survey, a three-man team composed of Wiberg, Whitney and Alan Bjornsen evaluated over 13,000 miles of waterways involving five major rivers and 2,000 tributaries. They accomplished that mammoth task by land and water travel, covering 700 miles of waterway in a 3-inch draft, flat-bottom boat, and over 10,000 miles by car, surveying the rivers from over 600 bridge crossings along the way.

The water survey, far from being a leisurely descent downriver, Tom-Sawyer-style, involved tricky navigation and almost minute-by-minute record keeping of observations en route.

The team's observations included such entries as, "no banks, flooded woods . . . map shows one short stretch of upland on east then swamp again . . . making good time . . . nearly garrotted by 2' high trot line across river . . . river poorly defined—looking for channel. . . ."

Most observations bore on the capacity of the river to support increased use, recreational or otherwise, and on what form this usage might take (e.g. pleasure boating, fishing, swimming etc.). The team noted adequacy of flow which is essential to navigability and obstructions, such as snags and trot lines (fishing wires) that could be easily removed.

Equally important was the river's present usage, which varied greatly from waterway to waterway, and often for rather interesting reasons. Wiberg noticed that on the lower stretches of the St. Marys which separates Georgia from Florida, there was extensive vacation home development on the Florida shore while the equally desirable Georgia shore was almost deserted.

"The development pushing up from Florida," Wiberg surmises, "is temporarily halted when it meets the river and the physical, political and psychological barrier it represents."

The team also observed considerable recreational use on the Chattooga River, which, with the Tallulah, served as the locale for the movie *Deliverance*. "Usage has really jumped," says Wiberg, "ever since they released that movie and people realized what an exciting place a river can be." In addition to observations of the rivers themselves and interviews with local residents, the Ecosystems team conducted a six month long search of a wide range of documents, some dating back over a hundred years, to determine past usage and condition of the basin's waterways.

Another Ecosystems team is currently operating in Alabama. Don Biondi and Woody Adams have just returned from an eight day exploration of the Cahaba, a turbulent up-country river, and are preparing their next expedition to the Tapaloosa.

Ecosystems is already shaping up as a leader in the navigability and mapping field, partly as a result of a reputation established through the Savannah District survey. With the increased demand for further navigability surveys, Ecosystems has received contract for surveys in Alabama, Missouri and Alaska.

The Alaska survey, which will be completed by December, covers a hundred-mile-wide swath from the Arctic Sea to the Pacific along the planned route of the Alaska pipeline.

The $150,000 study will aid in determining which of the 4,000 miles of Alaskan waterways affected by the pipeline will fall under Federal jurisdiction. The Ecosystems team of Alan Bjornsen and Don Briggs has spent the whole of July exploring and studying over 4,000 miles of river system by helicopter. Another month was spent digging up background information through a literature search and interviews.

"The pipeline's construction will bring ever greater pressure for river use along the project's route," says Wiberg, "and the navigability determination will help channel and control that growth."

What form that growth will take in Alaska as well as in the rest of the nation will await the decisions of the Corps, the courts and the state legislatures. That outcome will be determined in part by the findings of the Ecosystems' crew and their meticulous accountings of the personalities of the country's rivers.

Sewell receives Chanute award

Charles A. "Chuck" Sewell, chief test pilot for Grumman Aerospace, received the 1974 Octave Chanute Award on August 13. The award is presented by the American Institute of Aeronautics and Astronauts for "a notable contribution to the aerospace sciences made by an engineering pilot."

Sewell received the award in recognition of his 121 spin-prevention system test flights in the F-14 and his "contribution to the aerospace sciences in promoting the concept of spin prevention in a tactical airplane and for leading this concept through design and flight test." Sewell, who is no stranger to awards, received the Iven C. Kincheloe Award from the Society of Experimental Test Pilots last year. That organization named Sewell, "the outstanding test pilot" of 1973.

Sewell, a retired Marine lieutenant colonel, has logged over 7,000 flight hours including over 300 combat missions in Korea and Vietnam. He joined Grumman in 1969 and became chief test pilot two years later.

UTTAS test

(Continued from page 2)

engines. After the GTV has accumulated 50 test hours, Boeing will begin flight testing the three flight prototypes, the first of which will be delivered to Calverton in September.

The Grumman Data Systems Automated Telemetry System (ATS) will handle the test monitoring of the three flying prototypes and the ground test vehicle, using a slightly modified version of the Automated Telemetry System (ATS) that has proven so successful in the testing of the F-14. "It was Grumman's experience in the development of the ATS for the F-14 program and Grumman's consequent leadership in the field that led to the award of the Boeing contract," says B. T. Johnson, Boeing's Director of UTTAS flight test program.

Aerospace role

In support of the UTTAS program Grumman Aerospace will be responsible for the installation of the required UTTAS facilities and the orderly introduction of the Boeing test activities into the daily Calverton routine. To accommodate the UTTAS program at Calverton, Grumman has provided a special tie-down site for the ground test vehicle and semi-permanent office quarters adjacent to Plant 6 that will house approximately 100 project personnel. Across the service road from these quarters, a new hangar complex is being readied to house the three UTTAS flight prototypes.

F-14 experience valuable

Members of the Flight Acceptance Department, using the experience gained during the recent F-14 flight test program, have been familiarizing the Boeing flight test team with the Calverton flight test system and assisting their Boeing counterparts in adapting the UTTAS test requirements with the unique capabilities of the ATS.

The Data Systems effort performed under the contract with BCS consists of two phases, the first, which will be completed in 1974, involves the creation of over 30 real-time applications programs and other batch support software from specifications provided by BCS.

Testing till '76

The second phase, which is scheduled for early August, will involve the real time testing of the GTV and, later, the flight vehicles. The real-time software, together with the ATS system, will provide Boeing vehicle performance data in real-time for hundreds of planned test condtions. Flight testing will continue until early 1976.

The Boeing-G r u m m a n effort was initiated in 1972. In 1973 Grumman Data Systems received an initial $325,000 contract from BCS for ATS software development. Since that time, in the words of GDS UTTAS program manager George Vallely, "The project has resulted in an absolutely remarkable degree of cooperation." Adds Grumman Aerospace UTTAS test support manager John Umstetter, "This is the first time we've had a complete test program this size by an outside company at Calverton, and it couldn't have worked more smoothly. When you consider that there are four corporations involved, including two outside firms, that's an achievement".

Boeing's B. T. Johnson feels that "It has been very good working with Grumman over the last two years, and the recent shop support has been particularly outstanding."

Philippines considering OV-1 for counter-insurgency role

Though the F-14 Tomcat draws most of the publicity and foreign interest, the Grumman Mohawk has received renewed attention in recent months from a number of governments because of its ability to perform a variety of military missions. Recently, a contingent from the Philippine Air Force, headed by Brig. General Ernesto H. Bueno (above), Chief of the PAF's fighter wing, visited Plant 77, Stuart, Florida, for a flight evaluation of the Mohawk, with special emphasis on counterinsurgency, a role the OV-1A performed so well during the Vietnam conflict. Team members accompanying General Bueno were Col. Ramon Macabuhay, PAF Chief of Staff; Lt. Col. Roberto DePeralta; Lt. Col. Jose LaCalle; and Maj. George Aquino. While at Stuart the Air Force team from the Philippines also inspected the Grumman Gulfstream II and the HU-16B aircraft.

Pension fund

(Continued from page 3)

on a fully-funded basis. He also points out that full vesting rights are provided after 10 years' service, and that it is a trusteed plan—that is, all of the assets are held in trust, under trust agreements, for the sole benefit of the members of the Plan, both active and retired, and their beneficiaries.

"As additional information on the new law becomes available," Bradshaw said, "we will, of course, keep everyone informed on these matters."

OBITUARIES

WILLIAM H. HOHN of Contour Development, Plant 4, died August 25 at the age of 64. He had been with the company since 1951 and lived at 14 Wm. Penn Drive, Stonybrook.

CALVIN L. STEVENS of Loads and Criteria, Plant 35, died August 25 at the age of 47. He had been with Grumman Aerospace since 1962 and lived at 35 Greystone Drive, East Northport.

MICHAEL RACZ JR. of Instrument System Design, Plant 42 (Boeing/Vertol), died August 31 at the age of 48. He had been with Grumman Aerospace since 1963 and lived at 9 Fnton St., Huntington Station.

WALTER F. MEAD of Product in Control, Plant 4, died August 31 at the age of 56. He had been with the Company since 1966 and lived at 26 Sherman Road, Farmingdale.

HENRY L. WEISLER JR. of General Commodities, Plant 30, died September 5 at the age of 57. He had been with Grumman Aerospace over 34 years and lived at 4 Meadow Street, Bayville.

HENRY A. SMITH of P/S Aircraft System Services, Plant 87, died September 6 at the age of 58. He had been with the company since 1940 and lived at 639 Trisha Court, Ridgecrest, California.

Save energy

Energy and how to save it was the theme of an August 26 presentation at the Plant 30 cafeteria attended by most Grumman plant administrators. The "E n e r g y Conservation Awareness" program was outlined by Ron Peterson, director of Energy Programs and Larry Merrill of the Energy Conservation Project while conservation material such as badge, tags and car bumper stickers carrying the sunburst conservation emblem were distributed.

Merrill advised plant administrators that in their additional role as energy monitors they should serve as "a reminder not as a policeman" in their efforts to cut down on energy use. The monitor's job, Merrill said, was "to get people involved in energy reduction, to encourage energy saving suggestions, and to take energy-saving steps where necessary."

As an example of how energy-conservation common sense can pay off over the long run, Merrill estimated that a hangar door left open one unnecessary hour each day will waste 30,000 gallons of fuel oil in a year. Other wasteful, and unnecessary, practices include leaving lights on after working hours and leaving equipment running. The company will reduce lighting, heating and air conditioning loads where this can be done without affecting either employee comfort or work performance.

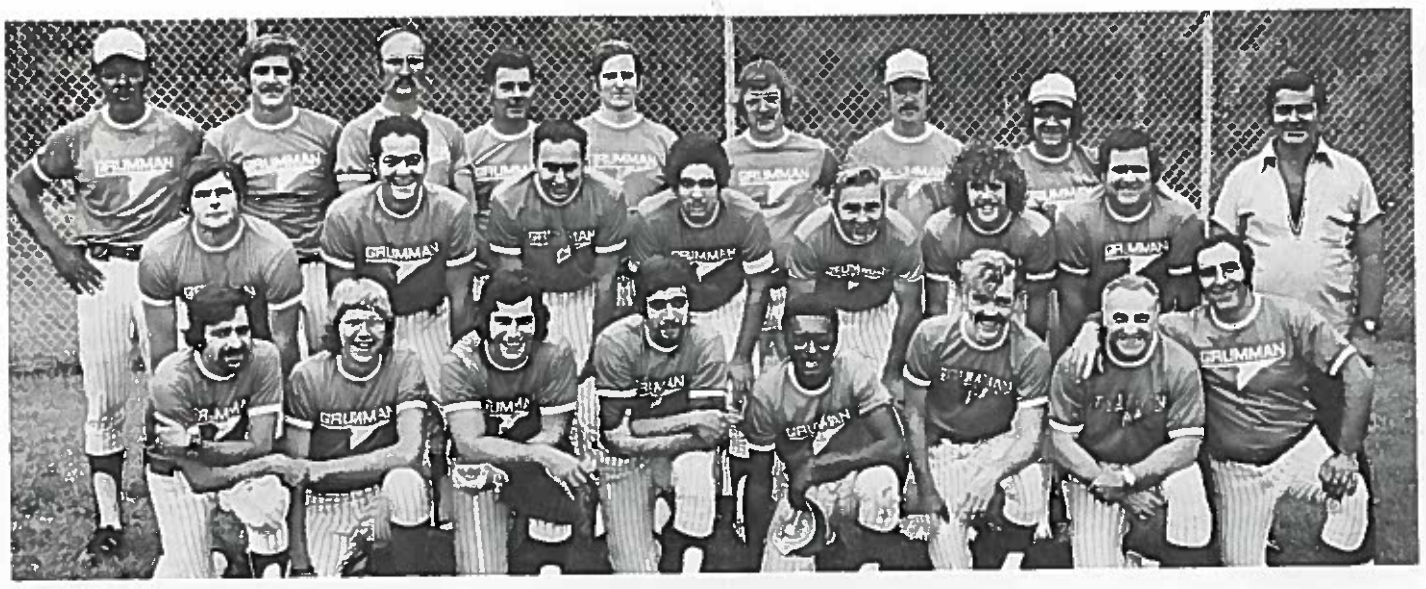
Energy conservation at Grumman has already resulted in substantial savings according to Merrill. In the last 17 months the company has saved about 1.5 million gallons of fuel oil and over 22 million kilowatt-hours of electricity. Merrill expects further savings in the future as energy conservation awareness is increased around Grumman.

Not all glasses safe

On 1 January 1972, an FDA (Food and Drug Administration) ruling required that all eyeglasses and sunglasses be impact-resistant. Most safety experts believe this ruling will reduce injuries caused by shattered eyeglass lenses . . . but . . . some people think that impact-resistant glasses afford the same protection as industrial safety glasses, says Dick Sanchez, Corporate Safety manager. Unfortunately it's not true, he states.

Industrial safety lenses must meet the requirements set forth in American National Standard Practice for Occupational and Educational Eye and Face Protection, Z87.1, 1968, which is referenced in OSHA (Occupational Safety & Health Act) regulations.

To meet the above standard, safety lenses must be at least three millimeters thick and be capable of withstanding the impact from a 1-inch diameter steel ball dropped from a height of 50 inches.



LI-Metro softball champions. The Grumman Intruders won the LI-Metro Industrial Softball tournament a few weeks ago to earn an invitation to the National Industrial World Series. Fifty teams from across the nation participated in the tourney that was held in Charlotte, N. C., over the Labor Day weekend. Members of the squad are: (l-r) kneeling - Domenic Pagnozzi, Tom Marion, Gary Ferrone, Al Griollo, Wes Douglas, Robert Dixon, Fred Vitale, and Vinny Perniciaro. Second row—Ed Fitzgerald, Freddy Neuscheler, Jimmy Karika, Dennis Marrone, John Andrews, Greg Ryan, manager Jack Keane, and coach John Shade. Back row—Dan Cooper, Ron Barlett, Billy Diercks, Jim Verteramo, John Burns, George Severin, Don Wallace, and Joe Cavalluzzo.

Intruders' quest of national title shattered

Life is a bunch of "ifs." And when the softball varsity members talk about the National Industrial slo-pitch tournament at Charlotte, N. C., over the Labor Day weekend they can't help but say: "If we weren't so tired after the long drive. If Johnny Burns' line drive in the sixth inning was just a little higher . . . If. . . ." But anyway you look at it, if the Intruders hope to win a national title, they'll have to wait next year.

The night of their arrival in Charlotte, the varsity took on Armco Triangle of Ohio and found themselves "prematurely" knocked into the losers bracket, 8-3. After a night's sleep, the Intruders beat Rhode Island Hospital Trust, 10-2. Dominic Pagnozzi (ss), Gary Ferone (of), Billy Diercks (of), and Dan Cooper (p) accounted for 12 of the 18 hits. That afternoon, the Grummanites kept on the winner's track slamming eight of their 16 hits in the sixth inning to defeat Raffiel Fisheries of Florida, 11-4. Diercks went three-for-four at the plate, one of which was a four-bagger.

The next morning they kept on slugging, this time trouncing the Cleveland Ohio Police, 11-4. The Grumman Intruders opened the game by slamming seven hits and crossing the plate six times. Twelve hits later, they chalked up another victory. Left fielder Denny Marrone went four-for-four; John Burns hit a home with two on.

If . . .

Things were certainly looking brighter for the LI-Metro Industrial tourney champs, but Pittsburgh Plate Glass shattered their hopes of rising out of the losers' bracket into the finals. John Burns opened the game with another home run, but by the fifth inning the Intruders were behind, 17-4. Suddenly they tightened up on defense and opened up their offensive battery, scoring seven runs in the bottom of the fifth, and five in the sixth, to make it 17-16.

Cooper opened the last inning with a single. Pagnozzi was out on a fielder's choice. Then Burns stepped into the batter's box and hit a long, line drive that missed going over the outfield wall by seven inches — and what would have been a winning two-run homer became no more than a single. Marrone, then Verteramo smashed line drives, but right into the outfielders' gloves. Thus ended the inning, the game, and the hopes of coming home as World champs. Better luck next year, fellas!

Golfers finish league season

For the first time in ten years, the Grumman golf varsity team didn't end the season as champs. Plagued by injuries, the squad finished 4-4-1. Mainstays for the varsity golfers this year were Al Herring, Bob Chalus, and Tony Cisco.

Forrest White, a newcomer to the varsity squad, made a name for himself in the Smithtown Landing club tournament by knocking off three-time champ, Mike Madden.

Several other Grummanites have carved names for themselves, too. On the 190-yd. fourth hole at Old Westbury Country Club, Rocco Vasti took only one stroke with his 3-iron to knock in it in the cup. . . . While playing with co-workers Tony Urivitch, and Joe and Sal Sardi at the West Sayville course, Jim MacNeil swung his five iron on the 170 yd. eighth hole and surprisingly, his comrades attest, the ball rolled into the cup.

Over the past season, the first Facilities Scotch foursome tournament was held (and from what we hear it was a success). Schwalbe-Addamo duo shot 91 for top honors. Earlier, Tony Trakimas shot his ball into Vinny Addamo's bag on the second hole of the Bethpage Blue course. Quite a discussion evolved when Tony asked Vinny to carry the bag up the hill so he could get a better lie. . . . George Streck of the Echo league parred five holes on the front nine of the Yellow course. His teammate Paul Burke, who had a hot putter, shot 46.

Tennis: women undefeated; Calverton tourney completed

For several years now the Grumman men's tennis varsity squads have established themselves as perennial champs in the L.I. Industrial league—and now it looks like the newly formed women's varsity squad is building its own dynasty on the net circuit.

In early July, a group of female tennis buffs got together to form the varsity team. Since no industrial women's tennis league was established at that time, Rita Looney of GAA went out looking for opponents. The only two companies that accepted the challenge were LILCO and Pan Am. The tennis squad has met with LILCO thrice and Pan Am twice — and came up victors in all five matches. The number one double team is Irene Gentile and Dorothy Kouwenhoven; Mary Michol-Kathy Housley make up the second duo; and Pat Ogilvie, Judi Kennedy and Barbara Trapani alternate on the third team.

The future, says Irene Gentile, is promising as more women are playing the game and wish to enter into competition play. Hopefully next year, more companies will field female teams.

This summer the first annual Calverton tennis tournament drew a total of 36 entrants in both singles and doubles play.

Singles champ Richard Kraus found smooth sailing on the way to his title in the one-loss-and-out tourney. Those who fell along the route were: Diane Hoefener, 6-0, 6-0; Alan Andrus, 6-1, 6-2; Robert Heberle, 6-0, 6-0; and, in the finals, Ed Cantrell, 6-2, 6-4.

In the doubles tourney, it looked like Krauss might end up wearing two crowns but he and his partner Tom Davis were stopped in the third round by runners-up, Neil Rieser and Mike Russo, 6-4, 3-6, 6-2. Rieser-Russo then moved into the finals but fell prey to Joe Ritz and Richard Hanney, 4-6, 6-1, 6-2. Ritz-Hanney duo breezed through the early stages of the tourney, eliminating Diane Hoefener and Patricia LaCagnina, 6-0, 6-3 and Al Andrus and Rich Brutkiewicz, 6-4, 6-2.

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